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09/909,566
BB1465 US NA

Substitute Sequence Listing - CRF
Substitute Sequence Listing Paper Copy - 6 pages
Copy of Notice to Comply With Requirements for Patent Applications Containing Nuclotide Sequence Disclosures
Sequence Statement
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APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/909,566	07/20/2001	Edgar B. Cahoon	BB1465 US NA

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FORMALITIES LETTER

OC000000008297684

Date Mailed: 06/17/2002

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Applicant is given **TWO MONTHS FROM THE DATE OF THIS NOTICE** within which to file the items indicated below to avoid abandonment. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing." Applicant must provide a substitute computer readable form (CRF) copy of the "Sequence Listing" and a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d).

For questions regarding compliance to these requirements, please contact:

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BIOTECHNOLOGY
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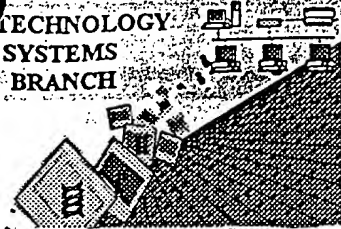
RAW SEQUENCE LISTING
ERROR REPORT

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Application Serial Number: **09/909,566 B**
Source: **OIPE**
Date Processed by STIC: **5-22-02**

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FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.
PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)
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Revised 01/29/2002

OIPE

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        RAW SEQUENCE LISTING              DATE: 05/22/2002
        PATENT APPLICATION:  US/09/909,566B      TIME: 11:28:29

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        Output Set: N:\CRF3\05222002\I909566B.raw

     3 <110> APPLICANT: Cahoon, Edgar B
     5 <120> TITLE.OF INVENTION: A Cytochrome P450 enzyme associated with the synthesis of
delta-
     6        12-epoxy fatty acids
     8 <130> FILE REFERENCE: BB1465 US NA
C--> 10 <140> CURRENT APPLICATION NUMBER: US/09/909,566B
C--> 11 <141> CURRENT FILING DATE: 2002-05-10
    13 <150> PRIOR APPLICATION NUMBER: 60/219833
    14 <151> PRIOR FILING DATE: 2000-07-21
    16 <160> NUMBER OF SEQ ID NOS: 7
    18 <170> SOFTWARE: Microsoft Office 97
    20 <210> SEQ ID NO: 1
    21 <211> LENGTH: 1733
    22 <212> TYPE: DNA
    23 <213> ORGANISM: Euphorbia lagascae
    25 <400> SEQUENCE: 1
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    27 gcttgtttta atcttagtag tagtcatgag gttgtggaag aaacagaatc cacctccagg   120
    28 gccatggaag tttcctatca taggtaatct tcctcattta ttactcactt ctgatctagg   180
    29 ccatgaacgt tttagagcct tggctcaaat ttatggacct gttatgagtc ttcaaattgg   240
    30 ccaagtttca gctgttgtca tttcttcagc tgaagcagcc aaagaggtta tgaaaactca   300
    31 ggctgatgcc ttcgcccaac gccctatcgt cttggacgca cagattgtgt tttataatcg   360
    32 gaaagatgtc ttgtttgctt catatggaga tcactggagg cagatgaaga aaatttggat   420
    33 acttgaattt ctgagtgcca aaaagttca atcctccagg ttaatccgag aggaagaaat   480
    34 ggaggatgcc atcacattcc tccgttcgaa agccggatct ccggtcaata ttacaaagat   540
    35 catttatggc attataattt cgatcatgat aagaacatcc gttggtaatt gtaagcaaaa   600
    36 agaaagattg ctgagtgttg ccgatgcagt caatgaggca gcgacgagtt ttggcaccgc   660
    37 agacgctttt ccgacgtgga aattacttca ctatatcatt ggagctgagt caaaacccag   720
    38 gcgtttgcat caggagattg acgatatact tgaagagatt cttaatgaac acaaagccaa   780
    39 taagcctttt gaagcggata acttaatgga tgttctattg aatcttcaaa aaaatggaaa   840
    40 cgttccagtg ccagtgacaa acgaaagcat caaagcatcc gttttgcaaa tgtttactgc   900
    41 cgggagcgaa acaacttcga aagctacaga atgggtaatg gcagagctga tgaaaaatcc   960
    42 aactgaacta agaaaagcac aagaagaagt tagacaagta tttggtgaaa tgggaaaagt  1020
    43 tgatgaatca agatttcatg atttgaaatt cttcaagtta gtggttaaag aaactctaag  1080
    44 attacatcct ccggttgtct tgattccgag ggagtgtaga gaaacaacac gaattgatgg  1140
    45 atatgaaatt catccgaaca ctcgaattgt tgtgaatgct tgggcgatag gaagagatcc  1200
    46 taatacttgg tcggaacctg gaaagtttaa cccagaaagg tttaaagatt gtgcaattga  1260
    47 ttataaaggg acgacatttg aactggtacc atttggtgca ggaaaaagaa tatgtcctgg  1320
    48 cattacttca gctattacca atttggagta tgtcattata aatctattat atcattttaa  1380
    49 ttgggaactg gccgatggaa ttacacctca aacacttgat atgactgaag ctattggcgg  1440
    50 tgctctcagg aaaaaaatag atcttaagtt gattcctatt ccatatcaag ttagcttagg  1500
    51 ctcaaatatt tcttgattac ataggagggt tgaaatatat ataataaact ttaattaacg  1560
    52 atgttctaat atggtttggg tgagttataa taggttttcc accgatcata taagtagcct  1620
    53 tctttgatgg atgggttaga ttataatgag ttgtgggttg gattttttaga tgggttaaat  1680
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Output Set: N:\CRF3\05222002\I909566B.raw

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57 <210> SEQ ID NO: 2
58 <211> LENGTH: 500
59 <212> TYPE: PRT
60 <213> ORGANISM: Euphorbia lagascae
62 <400> SEQUENCE: 2
63 Met Glu Gln Lys Asn Leu Ser Phe Pro Ser Ile Leu Ile Ser Phe Leu
64  1               5                  10                  15
66 Leu Val Leu Ile Leu Val Val Val Met Arg Leu Trp Lys Lys Gln Asn
67              20                  25                  30
69 Pro Pro Pro Gly Pro Trp Lys Phe Pro Ile Ile Gly Asn Leu Pro His
70          35                  40                  45
72 Leu Leu Leu Thr Ser Asp Leu Gly His Glu Arg Phe Arg Ala Leu Ala
73          50                  55                  60
75 Gln Ile Tyr Gly Pro Val Met Ser Leu Gln Ile Gly Gln Val Ser Ala
76  65                  70                  75                  80
78 Val Val Ile Ser Ser Ala Glu Ala Ala Lys Glu Val Met Lys Thr Gln
79              85                  90                  95
81 Ala Asp Ala Phe Ala Gln Arg Pro Ile Val Leu Asp Ala Gln Ile Val
82              100                 105                 110
84 Phe Tyr Asn Arg Lys Asp Val Leu Phe Ala Ser Tyr Gly Asp His Trp
85          115                 120                 125
87 Arg Gln Met Lys Lys Ile Trp Ile Leu Glu Phe Leu Ser Ala Lys Lys
88          130                 135                 140
90 Val Gln Ser Ser Arg Leu Ile Arg Glu Glu Glu Met Glu Asp Ala Ile
91 145                 150                 155                 160
93 Thr Phe Leu Arg Ser Lys Ala Gly Ser Pro Val Asn Ile Thr Lys Ile
94              165                 170                 175
96 Ile Tyr Gly Ile Ile Ile Ser Ile Met Ile Arg Thr Ser Val Gly Asn
97              180                 185                 190
99 Cys Lys Gln Lys Glu Arg Leu Leu Ser Val Ala Asp Ala Val Asn Glu
100             195                 200                 205
102 Ala Ala Thr Ser Phe Gly Thr Ala Asp Ala Phe Pro Thr Trp Lys Leu
103         210                 215                 220
105 Leu His Tyr Ile Ile Gly Ala Glu Ser Lys Pro Arg Arg Leu His Gln
106 225                 230                 235                 240
108 Glu Ile Asp Asp Ile Leu Glu Glu Ile Leu Asn Glu His Lys Ala Asn
109                 245                 250                 255
111 Lys Pro Phe Glu Ala Asp Asn Leu Met Asp Val Leu Leu Asn Leu Gln
112         260                 265                 270
114 Lys Asn Gly Asn Val Pro Val Pro Val Thr Asn Glu Ser Ile Lys Ala
115         275                 280                 285
117 Ser Val Leu Gln Met Phe Thr Ala Gly Ser Glu Thr Thr Ser Lys Ala
118         290                 295                 300
120 Thr Glu Trp Val Met Ala Glu Leu Met Lys Asn Pro Thr Glu Leu Arg
121 305                 310                 315                 320
123 Lys Ala Gln Glu Glu Val Arg Gln Val Phe Gly Glu Met Gly Lys Val
124             325                 330                 335
126 Asp Glu Ser Arg Phe His Asp Leu Lys Phe Phe Lys Leu Val Val Lys
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RAW SEQUENCE LISTING   DATE: 05/22/2002
PATENT APPLICATION: US/09/909,566B   TIME: 11:28:29

Input Set : A:\bb1465 us nacorrected seq lst.txt
Output Set: N:\CRF3\05222002\I909566B.raw

```
127                340                345                350
129 Glu Thr Leu Arg Leu His Pro Pro Val Val Leu Ile Pro Arg Glu Cys
130        355                360                365
132 Arg Glu Thr Thr Arg Ile Asp Gly Tyr Glu Ile His Pro Asn Thr Arg
133     370                375                380
135 Ile Val Val Asn Ala Trp Ala Ile Gly Arg Asp Pro Asn Thr Trp Ser
136 385                390                395                400
138 Glu Pro Gly Lys Phe Asn Pro Glu Arg Phe Lys Asp Cys Ala Ile Asp
139                405                410                415
141 Tyr Lys Gly Thr Thr Phe Glu Leu Val Pro Phe Gly Ala Gly Lys Arg
142                420                425                430
144 Ile Cys Pro Gly Ile Thr Ser Ala Ile Thr Asn Leu Glu Tyr Val Ile
145        435                440                445
147 Ile Asn Leu Leu Tyr His Phe Asn Trp Glu Leu Ala Asp Gly Ile Thr
148     450                455                460
150 Pro Gln Thr Leu Asp Met Thr Glu Ala Ile Gly Gly Ala Leu Arg Lys
151 465                470                475                480
153 Lys Ile Asp Leu Lys Leu Ile Pro Ile Pro Tyr Gln Val Ser Leu Gly
154                485                490                495
156 Ser Asn Ile Ser
157                500
160 <210> SEQ ID NO: 3
161 <211> LENGTH: 502
162 <212> TYPE: PRT
163 <213> ORGANISM: Capsicum annuum
165 <400> SEQUENCE: 3
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167  1              5                 10                15
169 Ser Ile Ile Leu Leu Leu Lys Lys Trp Lys Thr Gln Lys Leu Asn Leu
170                20                25                30
172 Pro Pro Gly Pro Trp Lys Leu Pro Phe Ile Gly Ser Leu His His Leu
173        35                40                45
175 Ala Val Ala Gly Pro Leu Pro His His Gly Leu Lys Asn Leu Ala Lys
176     50                55                60
178 Leu Tyr Gly Pro Leu Met His Leu Arg Leu Gly Glu Ile Pro Thr Val
179  65                70                75                80
181 Ile Ile Ser Ser Pro Arg Met Ala Lys Glu Val Leu Lys Thr His Asp
182                85                90                95
184 Leu Ala Phe Ala Thr Arg Pro Lys Leu Val Val Ala Asp Ile Val His
185                100                105                110
187 Tyr Asp Ser Thr Asp Ile Ala Phe Ser Pro Tyr Gly Glu Tyr Trp Arg
188        115                120                125
190 Gln Ile Arg Lys Ile Cys Ile Leu Glu Leu Leu Ser Ala Lys Met Val
191     130                135                140
193 Lys Phe Phe Ser Ser Ile Arg Gln Asp Glu Leu Ser Met Met Val Ser
194 145                150                155                160
196 Ser Ile Arg Thr Met Pro Asn Phe Pro Val Asn Leu Thr Asp Lys Ile
197                165                170                175
199 Phe Trp Phe Thr Ser Ser Val Thr Cys Arg Ser Ala Leu Gly Lys Ile
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RAW SEQUENCE LISTING   DATE: 05/22/2002
PATENT APPLICATION: US/09/909,566B   TIME: 11:28:29

Input Set : A:\bb1465 us nacorrected seq lst.txt
Output Set: N:\CRF3\05222002\I909566B.raw

```
200              180              185              190
202 Cys Arg Asp Gln Asp Lys Leu Ile Ile Phe Met Arg Glu Ile Ile Ser
203          195              200              205
205 Leu Thr Gly Gly Phe Ser Ile Ala Asp Phe Phe Pro Thr Trp Lys Met
206      210              215              220
208 Leu His Asp Val Gly Gly Ser Lys Thr Arg Leu Leu Lys Ala His Arg
209 225          230              235              240
211 Lys Ile Asp Glu Ile Leu Glu His Val Val Asn Glu His Lys Gln Asn
212              245              250              255
214 Arg Ala Asp Gly Gln Lys Gly Asn Gly Glu Phe Gly Gly Glu Asp Leu
215          260              265              270
217 Ile Asp Val Leu Leu Arg Val Arg Glu Ser Gly Glu Val Gln Ile Ser
218          275              280              285
220 Ile Thr Asp Asp Asn Ile Lys Ser Ile Leu Val Asp Met Phe Ser Ala
221      290              295              300
223 Gly Ser Glu Thr Ser Ser Thr Thr Ile Ile Trp Ala Leu Ala Glu Met
224 305              310              315              320
226 Met Lys Lys Pro Ser Val Leu Ala Lys Ala Gln Ala Glu Val Arg Gln
227              325              330              335
229 Val Leu Lys Glu Lys Lys Gly Phe Gln Gln Ile Asp Leu Asp Glu Leu
230          340              345              350
232 Lys Tyr Leu Lys Leu Val Ile Lys Glu Thr Leu Arg Met His Pro Pro
233      355              360              365
235 Ile Pro Leu Leu Val Pro Arg Glu Cys Met Lys Asp Thr Lys Ile Asp
236      370              375              380
238 Gly Tyr Asn Ile Pro Phe Lys Thr Arg Val Ile Val Asn Ala Trp Ala
239 385              390              395              400
241 Ile Gly Arg Asp Pro Glu Ser Trp Asp Asp Pro Glu Ser Phe Ser Pro
242          405              410              415
244 Glu Arg Phe Glu Asn Ser Ser Val Asp Phe Leu Gly Ser His His Gln
245          420              425              430
247 Phe Ile Pro Phe Gly Ala Gly Arg Arg Ile Cys Pro Gly Met Leu Phe
248      435              440              445
250 Gly Leu Ala Asn Val Gly Gln Pro Leu Ala Gln Leu Leu Tyr His Phe
251      450              455              460
253 Asp Arg Lys Leu Pro Asn Gly Gln Ser His Glu Asn Leu Asp Met Thr
254 465              470              475              480
256 Glu Ser Pro Gly Ile Ser Ala Thr Arg Lys Asp Asp Leu Val Leu Ile
257              485              490              495
259 Ala Thr Pro Tyr Asp Pro
260              500
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263 <210> SEQ ID NO: 4
264 <211> LENGTH: 51
265 <212> TYPE: DNA
266 <213> ORGANISM: artificial sequence
W--> 268 **<220> FEATURE:**
W--> 268 **<223> OTHER INFORMATION:**
268 <400> SEQUENCE: 4
269 tcaaggagaa aaaaccccgg atccatggag cagaaaaatc tctcttttcc g   51

RAW SEQUENCE LISTING   DATE: 05/22/2002
PATENT APPLICATION: US/09/909,566B   TIME: 11:28:29

Input Set : **A:\bb1465 us nacorrected seq 1st.txt**
Output Set: **N:\CRF3\05222002\I909566B.raw**

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      272 <210> SEQ ID NO: 5
      273 <211> LENGTH: 35
      274 <212> TYPE: DNA
      275 <213> ORGANISM: artificial sequence
W+-> 277 <220> FEATURE:
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      278 ggccagtgaa ttgtaatacg actcactata gggcg                      35
      281 <210> SEQ ID NO: 6
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      283 <212> TYPE: DNA
      284 <213> ORGANISM: artificial sequence
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      287 gcggccgcga attcggaaaa tggagcagaa aaatc                      35
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      293 <213> ORGANISM: artificial sequence
W--> 295 <220> FEATURE:
W--> 295 <223> OTHER INFORMATION:
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      296 gcggccgcgg atccttagaa catcgttaat taaag                      35
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 05/22/2002
PATENT APPLICATION: US/09/909,566B   TIME: 11:28:30

Input Set : A:\bbl465 us nacorrected seq lst.txt
Output Set: N:\CRF3\05222002\I909566B.raw

Use of <220> Feature(NEW RULES):
Sequence(s)__are missing the <220> Feature and associated headings.
Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence"
or"Unknown". Please explain source of genetic material in <220> to <223>
section (See "Federal Register," 6/01/98, Vol. 63, No. 104,pp.29631-32)
(Sec.1.823 of new Rules)

Seq#:4,5,6,7

VERIFICATION SUMMARY　　　　　　　　DATE: 05/22/2002
PATENT APPLICATION:　 US/09/909,566B　　　TIME: 11:28:30

Input Set : A:\bb1465 us nacorrected seq 1st.txt
Output Set: N:\CRF3\05222002\I909566B.raw

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L:10 M:270 C: Current Application Number differs, Replaced Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:268 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:268 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:277 M:258 W: Mandatory Feature missing, <220> FEATURE:
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